

REMARKS

Claims 1-23 are pending in this application. By this Amendment, the specification and claims 1-6, 9-14 and 18 are amended, and claims 20-23 are added. Reconsideration of the application is respectfully requested.

Applicants gratefully appreciate the indication that claims 10, 11 and 16-19 contain allowable subject matter.

Applicants also appreciate the withdrawal of the Restriction Requirement.

The Office Action rejects claim 13 under 35 U.S.C. §112, second paragraph.

Applicants respectfully disagree. Claim 13 recites an electric component mounting method that comprises the step of carrying out the position detecting method according to claim 1, and the method according to claim 1 comprises the step of detecting the position of the at least one lead by processing image data representing the taken image. Accordingly, claim 13 does recite the step of detecting the position of the at least one lead, and that the step of detecting the position provides adequate antecedent basis for the feature of "based on data representing the detected position of the at least one lead." Accordingly, claim 13 does point out and distinctly claims its subject matter. Accordingly, withdrawal of the rejection of claim 13 under 35 U.S.C. §112, second paragraph, is respectfully requested.

The Office Action rejects claims 1-19 under 35 U.S.C. §102(e) over Higashi et al. (U.S. Patent No. 6,738,504). The rejection is respectfully traversed.

In particular, Higashi fails to disclose or suggest a method of detecting a position of at least one lead of an electric component, and associated apparatus, that includes illuminating, with a light incident to the at least one lead in a direction substantially perpendicular to a lengthwise direction thereof, a lengthwise limited portion of the at least one lead without illuminating a base end portion thereof that is adjacent to the body, taking an image of the lengthwise limited portion of the at least one lead, and detecting the position of the at least

one lead by processing image data representing the taken image, as recited in independent claim 1 and similarly recited in independent claim 14.

Higashi teaches an inspection apparatus for semiconductor devices that includes a light irradiation means for irradiating light to a surface of a semiconductor device, an image pickup means for picking up a plane image of the surface of the semiconductor device and an inspection means for inspecting misalignment of tips of the external connection terminals based on the image data (Abstract). Moreover, Higashi teaches an inspection apparatus that comprises a light irradiation means 22 that irradiates light to a surface 16a of a semiconductor device 16, the surface 16a having external connection terminals 14 (Fig. 4). Also, Higashi teaches illuminating the outer surface 16a of the body 16 of the semiconductor device and thereby illuminating a base end portion, which is the convex hemispheric root 12a of each external connection terminal 14 (Fig. 5A). Thus, Higashi teaches taking not only an image C of the tip a of each lead 14, but Higashi also teaches taking an image B of the base end portion 12a of each lead 14 (Fig. 5B). Thus, Higashi teaches illuminating the base end portion 12a and does not teach illuminating a portion of the at least one lead without illuminating a base end portion thereof, as recited in independent claim 1 and similarly recited in independent claim 14.

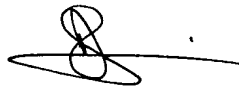
Moreover, Higashi teaches that the light irradiation unit 22 is preferably positioned to irradiate light at an angle θ that is greater than 0° and not greater than 45° , with respect to the surface 16a (Fig. 5A, col. 5, lines 44-47). Moreover, Higashi teaches that the angle θ must be greater than 0° to provide bright spots C on the tips a of the leads 14 (col. 5, lines 56-57). Accordingly, Higashi teaches away from making an incident angle θ equal to 0° by teaching that the angle θ must be greater than 0° . Thus, Higashi teaches away from illuminating a light incident to the lead in the direction substantially perpendicular to a lengthwise direction of the lead, as recited in independent claim 1 and similarly recited in independent claim 14.

For at least these reasons, independent claims 1 and 14, and their dependent claims, are patentable over Higashi. Thus, withdrawal of the rejection of the claims under 35 U.S.C. §102(e) is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-23 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Amendment Transmittal

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